California Conservation Corps

2017
Annual Report to the
Proposition 39
Citizens Oversight Board

14 March 2018

About the CCC:

Founded by Governor Brown in 1976 during his first term as Governor, the California Conservation Corps ('CCC') and its Corpsmembers have performed more than 41 years of conservation work directly benefiting the citizens of California, and have trained more than 120,000 young adults as CCC Corpsmembers. The CCC also has more than 32 years of direct experience working on Energy Efficiency ('EE') and Renewable Energy ('RE') projects and programs throughout California. In 2013 the CCC established the "Energy Corps" as an operational group within the CCC that provides the following services to Californians:

Energy Industry Training & Work Experience – CCC Energy Corps Corpsmembers ('Corpsmembers') and Staff are trained by the CCC's professional staff, Community College and University Partners, and other Energy Corps Partners (energy industry experts) to become capable, efficient, and highly effective, and substantially experienced individuals performing a variety of EE and RE projects throughout the State on a highly cost effective basis.

Cooperative Energy Industry Partnerships – The CCC's Energy Corps is all about developing partnerships with Sponsors, Clients, and Energy Industry expert program Partners to establish energy conservation workforce development projects and program opportunities that provide highly relevant and extensive energy industry training & work experience opportunities for Corpsmembers, as well as creating energy conservation savings and Green House Gas Emissions ('GHGE') reductions that benefit K12 Schools as recipients of these services, and the Citizens of California in general.

Innovative Energy Corps Program Designs – The CCC works with Energy Corps partners and sponsors to create new, innovative, and cooperative EE and RE workforce development Programs and Projects that directly engage Corpsmembers in saving energy, reducing energy demand and use, energy operating costs, substantially improving the operational and learning environments within K-12 LEA Schools for Students and Staff, and reducing GHGE. All of which creates multiple 'pathways' for CCC Corpsmembers to energy industry Employers and job opportunities.

Energy Industry Services – The CCC's Energy Corps provides Proposition 39 Funded energy conservation services extensively to K-12 LEAs throughout California, as well as reimbursement contract funded EE conservation work with Energy Industry partnering Companies (contractors, ESCOs, 3rd party EE companies, etc.), Investor Owned and Municipal owned Utilities, State Agencies, non-profit organizations, and others.

Resources & Operational Centers – The CCC has more than 1,400 Corpsmembers (FTE) positions located within the 26 CCC operating centers statewide, along with the Staff and infrastructure necessary to train, deploy, support, and manage these Corpsmembers in the CCC's successful work-learn Program.

CCC Energy Centers – In 2017 four (4) of the 26 CCC operating centers were dedicated "Energy Centers" (located in Sacramento, San Jose, Norwalk, and Vista), and one (1) CCC Center (Fresno) that provided both Energy Corps crews and Natural Resource Conservation Crews. Currently, the CCC operates and deploys ten (10) Proposition 39 funded Energy Corps Crews and four (4) reimbursement contract funded crews from these 4 CCC Centers. Collectively, these Energy Corps crews provide energy conservation project and program services that conserve energy, reduce energy costs, and reduce GHGE throughout the State.

<u>CCC & 'Local Conservation Corps'</u> – In addition to the 26 CCC Centers located Statewide, there are also fourteen (14) Local Conservation Corps located throughout California ('Local Corps'). Each of these Local Corps are certified operationally by the CCC. The CCC and participating certified local Conservation Corps have the ability to work together to provide professionally trained and managed Corpsmembers, infrastructure, and a range of energy conservation services for EE and RE projects & programs throughout California.

The map to the left shows the 2017 locations of the 4 dedicated CCC "Energy Centers" (Sacramento, Norwalk & Vista), the 1 CCC Center (Fresno) that provides both Energy Corps crews and Natural Resource Conservation Crews (identified by the yellow 'lightning bolts'), as well as all of the CCC's 26 operating locations, and the locations of the 14 Local Conservation Corps throughout California.

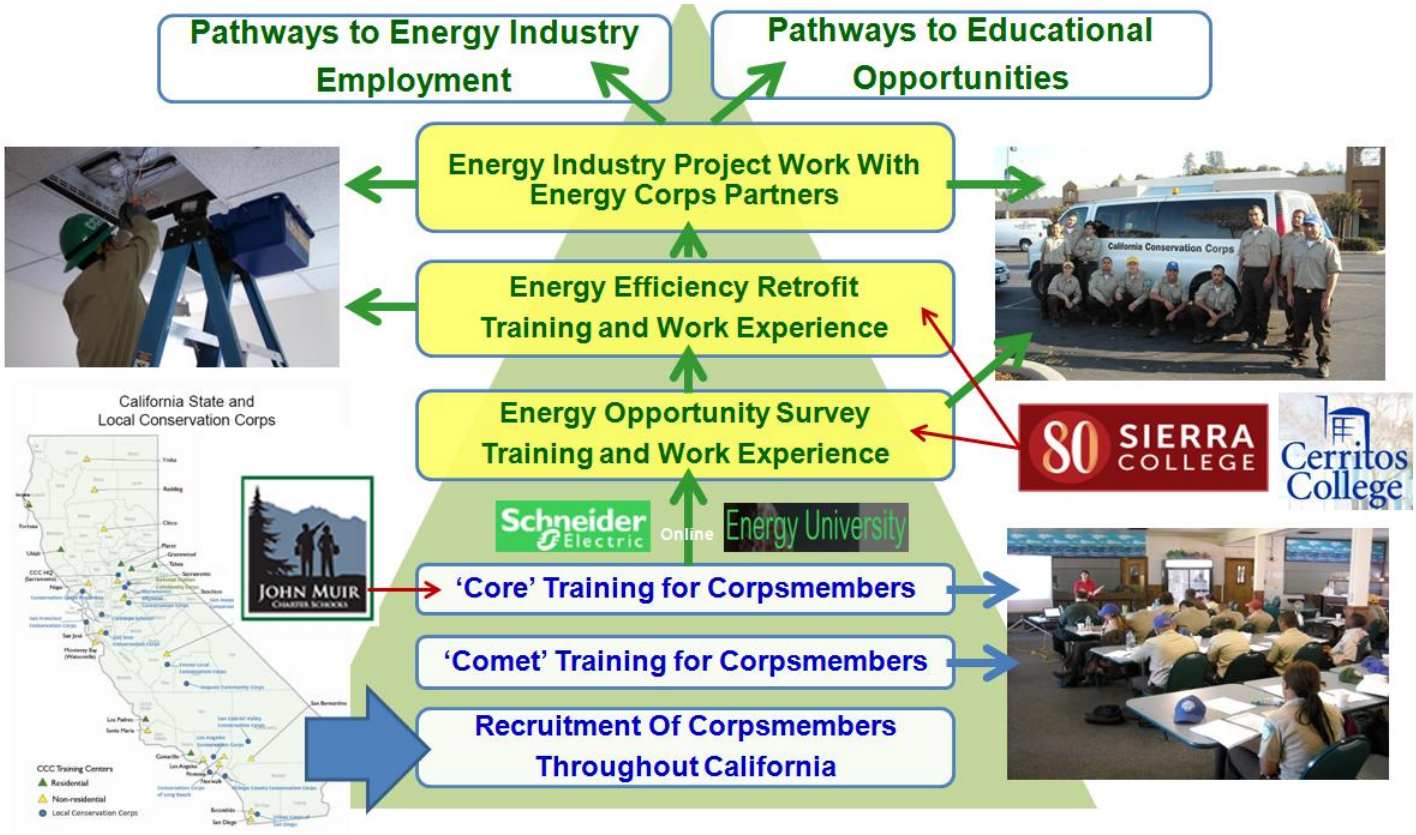
About the CCC's Proposition 39 Funded Energy Corps Services:

Energy Industry Services Designed to Meet the Following Goals:

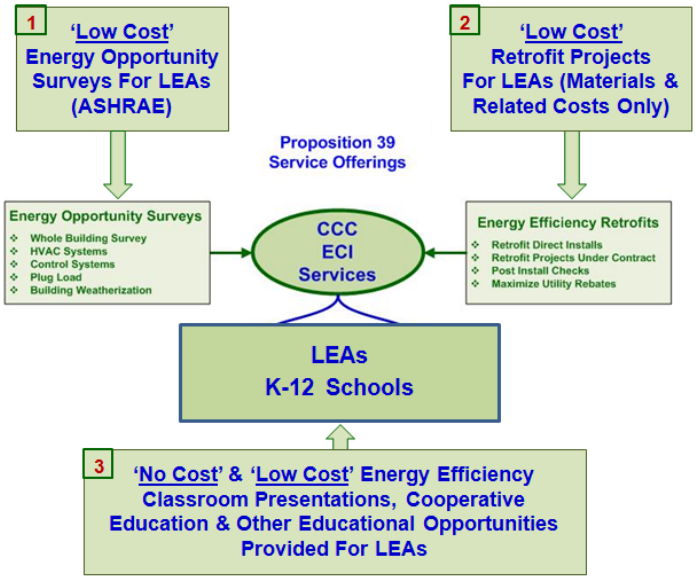
Create Multiple Energy Job Opportunity Pathways – Developing innovative energy conservation partnerships with energy industry companies and organizations that create and encourage multiple employment opportunity 'pathways' for CCC Energy Corps Corpsmembers ('Corpsmembers') interested in pursuing careers within the energy industry.

Provide Relevant Energy Industry Training & Work Experience – Classroom and lab based energy industry training (procedures, tools, process, standards, etc.) and a continuum of extensive 'on-the-job' training and work experience are provided for all Energy Corps Corpsmembers by energy industry companies, Colleges, and Energy Corps Partners. Corpsmembers are young adults from 18 to 25, and recently returned veterans to 29.

As illustrated in the diagram below, after joining the CCC all Corpsmembers receive their initial CCC 'COMET' and 'CORE' training. Corpsmembers then receive energy industry specific formal classroom and lab based training(s) to perform Energy Opportunity Surveys (ASHRAE Level II compliant Energy Audits) and for the installation of Energy Efficiency Retrofits. Upon successful completion of their energy industry training, Corpsmembers receive extensive on-the-job training and work experience 'in the field' working on energy conservation projects for K-12 Schools that are delivered either directly by the CCC to LEA clients, or through project work performed with Energy Corps partners and energy industry experts working with LEAs.



<u>Save Energy, Reduce Costs, & Improve Learning Environment for K-12 Schools</u> – The CCC provides a variety of important and much needed Proposition 39 funded energy industry conservation services to K-12 LEAs located throughout California. Beginning with "whole building" ASHRAE compliant Energy Opportunity Surveys, the CCC's energy conservation services identify energy conservation opportunities, followed by EE retrofit installation services that provide improved energy efficiency solutions for K-12 LEAs throughout California:



<u>Provide Pathways to Energy Industry Jobs</u> – The CCC's Energy Corps is actively developing the 'next generation' of energy industry workers by providing energy industry training and extensive work experience for Corpsmembers. This approach to energy industry workforce development is helping to transform the market for 'entry level' energy industry jobs, at a time when the energy industry is having great difficulty in finding enough qualified employees with relevant energy industry work experience to fill their thousands of vacant entry level positions:

CCC Proposition 39 Allocations: - Over a period of five (5) Fiscal Years, the CCC has been allocated a total of **$26.889** million dollars to provide energy conservation services for K-12 LEAs and prepare Corpsmembers for energy industry job opportunities throughout California

CCC Proposition 39 Funding Allocations - In Thousands				
FY 17-18	FY 16-17	FY 15-16	FY 14-15	FY 13-14
$ 5,816	$ 5,660	$ 5,406	$ 5,000	$ 5,007

'Low Cost' Energy Opportunity Surveys – Since December of 2013, the CCC has performed ASHRAE Level II compliant (energy industry standard), whole building "Energy Opportunity Surveys" (energy audits) for more than **1,300** Schools located in **439** LEA districts, consisting of more than **13,800** school buildings that total more than **79** Million Square Feet throughout California. These Proposition 39 funded CCC Energy Opportunity Surveys provide LEAs with extensive on-site collection of data by the CCC's Energy Corps Corpsmembers (paid for by the CCC's Proposition 39 allocation) for all building envelope, energy sub-systems, O&M practices, plug loads, and the detailed physical inventory and site information necessary to identify, calculate, and recommend available energy savings opportunities, recommended "O&M best practices", and how to make the best use of any locally available EE incentive programs.

Once the data has been collected and processed by the Energy Corps, it is then provided to the LEA and their energy efficiency partner (if any), or to a qualified and 'low cost' CCC Energy Corps Partner to perform the detailed data analysis, modeling, retrofit and O&M best practices recommendations (prepared as an 'Energy Opportunity Survey Report' for the LEA). In addition to the CCC's Survey Report, the LEA also receives the completed CEC Proposition 39 calculator required for submission with the LEA's Energy Efficiency Plan ('EEP') to the CEC.

The CCC's Energy Opportunity Surveys are the foundation of information upon which the most effective use of any energy efficiency project funds can best be determined, prioritized, and sequenced. The following is a summary of the cumulative CCC Energy Opportunity Surveys provided to K-12 LEAs from July 2013 through December 2017:

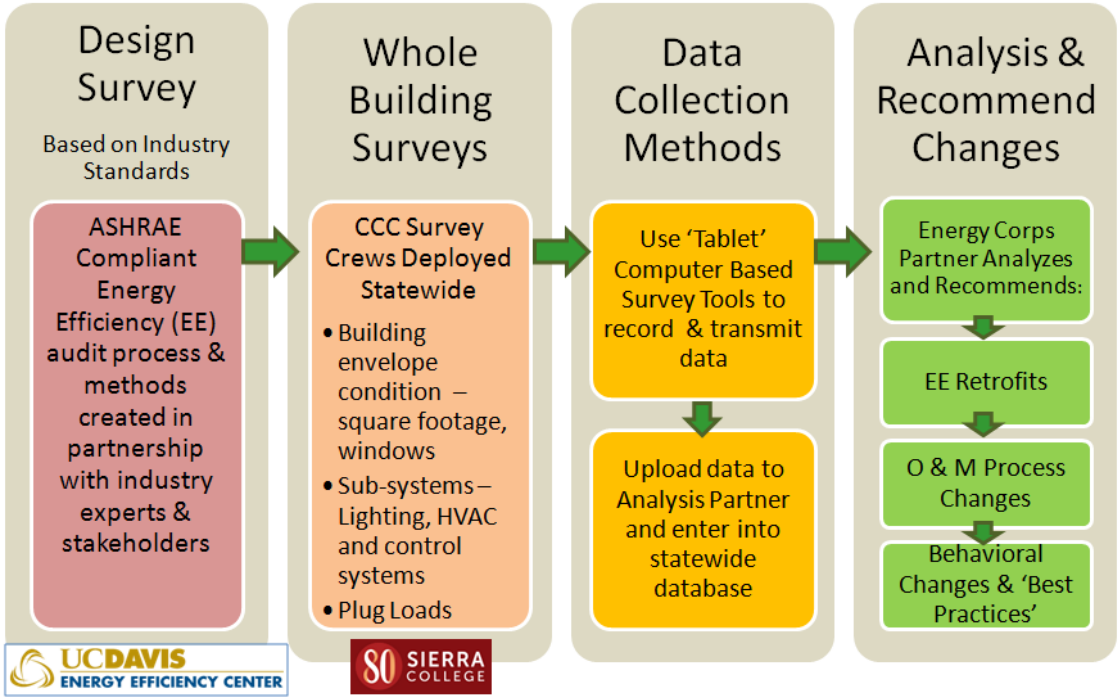
Proposition 39 Funded Energy Opportunity Surveys	"To Date"		Totals by Calendar Years				
			2017	2016	2015	2014	2013
Total LEAs Requesting Services	439		7	32	25	246	129
Total Number of Project Sites	1,429		92	192	161	979	5
Total Number of Completed Projects	1,420		83	192	161	979	5
Total Energy Surveys Completed	1,327		69	156	134	963	5
Total Buildings Surveyed	13,822		1,169	1,532	1,397	9,677	47
Total Square Footage Surveyed	79,002,745		9,331,848	6,563,081	9,115,576	53,773,464	218,776
LEAs Surveyed - Total	415		7	16	19	244	129
LEAs Surveyed - Over 5,000 ADA	81	20%	2	5	7	41	26
LEAs Surveyed - Under 5,000 ADA	334	80%	5	11	12	203	103
LEAs Surveyed - Over 50% FRPM	265	64%	4	11	15	163	72

Note 1: Although the CCC provides its Proposition 39 funded energy industry services to all LEAs that request assistance based upon the sequence of receiving their requests, additional scheduling preference for the provision of these services is provided by the CCC for K-12 LEAs with ADA levels of 5,000 or less, and LEAs with FRPM qualification levels of **50%** of ADA or greater.

Note 2: **80%** of all Surveys provided to LEAs have had ADA levels of **5,000** or less, while **64%** of all Surveys for LEAs have had FRPM qualification levels of **50%** or greater.

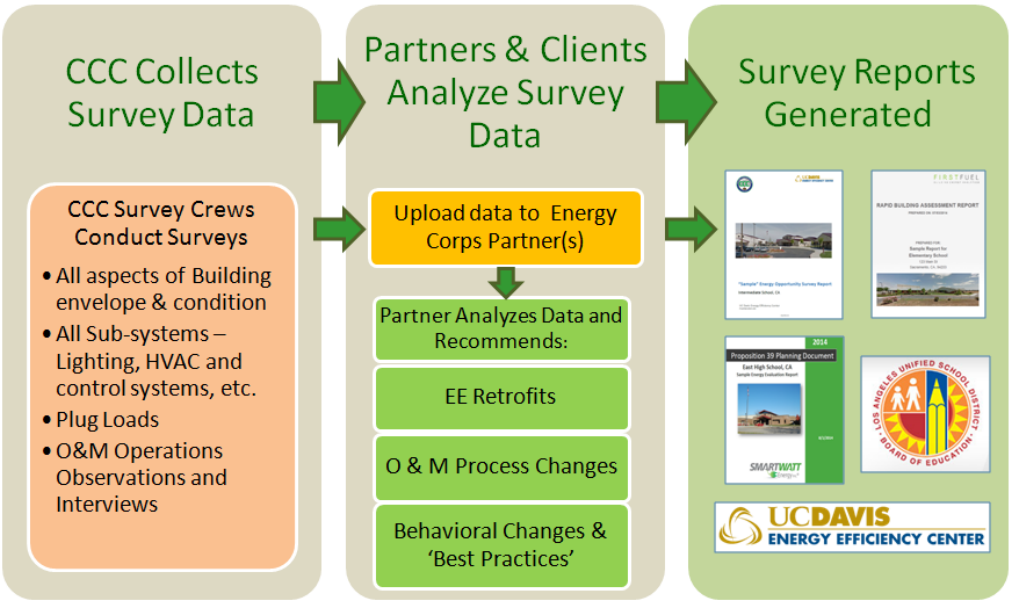
<u>CCC Energy Opportunity Survey Design</u>: The following diagram illustrates the processes by which the CCC's industry standard (ASHRAE compliant) Energy Opportunity Surveys were designed and implemented by the CCC and its Energy Corps partners:

ASHRAE Compliant Energy Opportunity Surveys are Created and Implemented as follows:



<u>CCC Survey Data Collection & Analysis</u>: The following diagram illustrates the processes by which the CCC's industry standard (ASHRAE compliant) Energy Opportunity Surveys are performed by the CCC (data collection) and its Energy Corps partners (data analysis):

ASHRAE Compliant Energy Opportunity Surveys are Created and Implemented as follows:



EE Retrofit Installation – Starting in mid 2015, the CCC's Energy Corps began providing Proposition 39 funded EE Lighting Retrofit Installation labor services for LEAs throughout the State. The CCC performs the installation labor (at no cost to LEAs) for 'low cost' installation of Energy Efficiency Lighting Retrofits and Lighting Controls for K-12 Schools that generate immediate, substantial, and sustainable energy and cost savings for LEAs. Since that time the CCC has completed **93** EE Lighting Retrofit Installation Projects for LEAs statewide; consisting of more than **124,000** lighting fixture replacements and lamp upgrades, and the installation of more than **8,500** Lighting Controls retrofits. Equally important, these EE Lighting Retrofit Installations performed by the CCC also improve the quality of the lighting in classrooms and other areas of the Schools, improving the learning environment for both students and staff.

The retrofit installation labor performed by the CCC's Proposition 39 funded Energy Corps Corpsmembers has already produced an annual savings of more than **7.5 Million kWh** (on a sustainable basis), a reduction of more than **1,800 Metric tons** annually in Green House Gas Emissions ('GHGE'), and a savings of more than **$1.26 Million** in energy specific operating costs for the LEAs receiving these CCC energy industry services. The status of the CCC's Proposition 39 funded EE Retrofit Installation services provided through the end of 2017 is as follows:

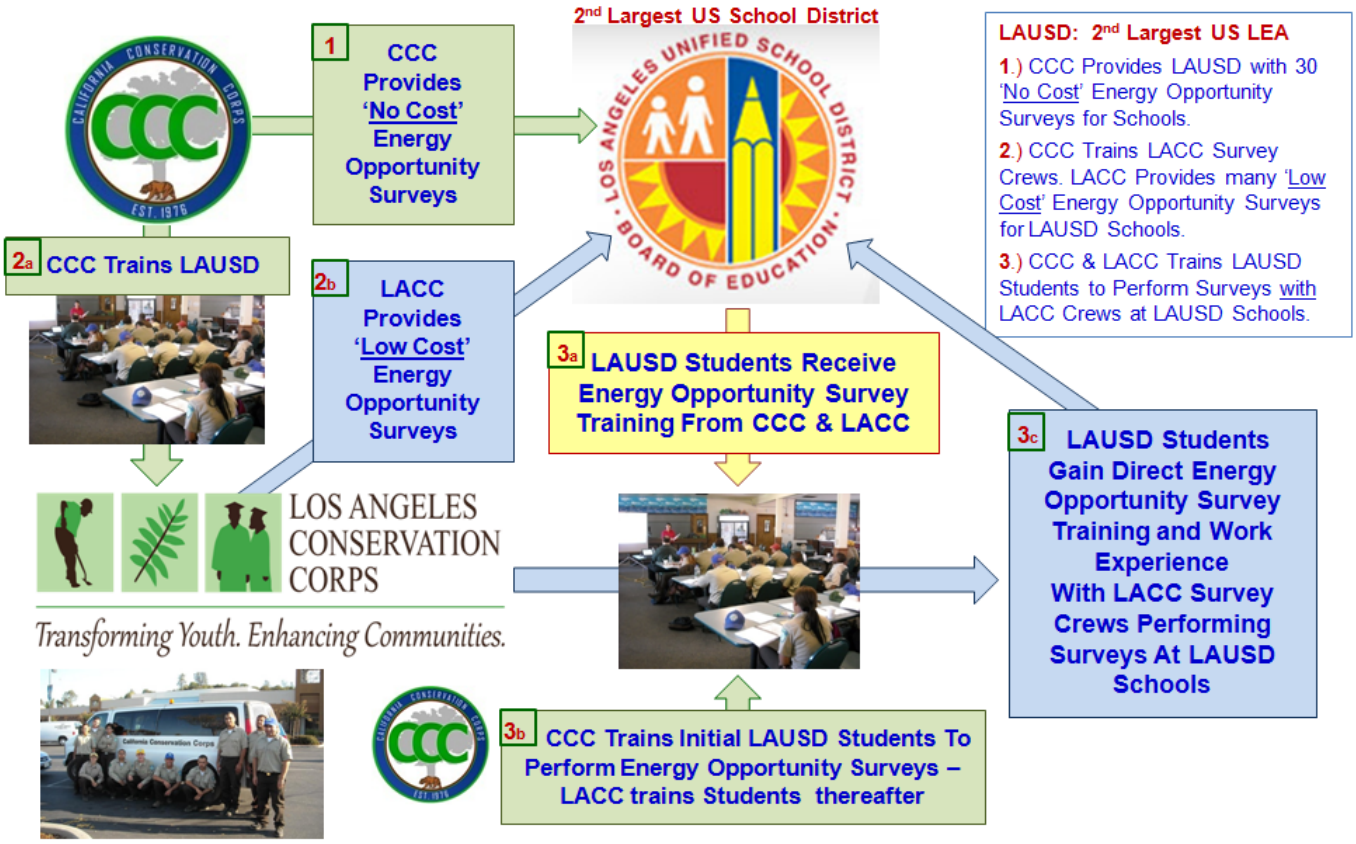
Proposition 39 Funded EE Retrofit Installations			Totals by Calendar Years				
	"To Date"		2017	2016	2015	2014	2013
Total LEAs Requesting Services	439		7	32	25	246	129
Total Number of Project Sites	1,429		92	192	161	979	5
Total Number of Completed Projects	1,420		83	192	161	979	5
Total Retrofit Projects Completed	93		14	36	27	16	0
Total Number of Lighting Retrofits	124,005		8,783	78,696	36,526	0	0
Total Number of Controls Retrofits	8,583		0	4,693	3,890	0	0
Estimated kWh Reduction Per Year	7,599,438		521,710	4,153,706	2,924,022	0	0
Estimated CO2 Reduction (Metric Tons)	1,807		124	988	695	0	0
Total LEAs Retrofitted - Total	54		14	17	9	14	0
LEAs Retrofitted Over 5,000 ADA	21	39%	6	6	4	5	0
LEAs Retrofitted Under 5,000 ADA	33	61%	8	11	5	9	0
LEAs Retrofitted Over 50% FRPM	29	54%	7	9	6	7	0

Note 1: Although the CCC provides its Proposition 39 funded energy industry services to all LEAs that request assistance based upon the sequence of the receipt of their requests, some scheduling preference for the provision of these services is provided for LEAs with ADA 5,000 or less, and LEAs with FRPM qualification levels of **50%** of ADA or greater.

Note 2: **61%** of all EE Lighting and Lighting Controls Retrofit Installations provided to K-12 LEAs have had ADA levels of **5,000** or less. **54%** of all EE Lighting Retrofit and Lighting Controls Retrofit Installations for LEAs have had FRPM qualification levels of **50%** or greater.

<u>Energy Conservation Education</u> - The CCC's Proposition 39 funded Energy Corps provide K-12 LEAs with several types of opportunities for educational engagements regarding energy conservation. These range from classroom presentations by the CCC on EE and RE topics and the Survey and Retrofit work being performed by the CCC at K-12 Schools, to much more advanced educational projects or programs. In such cases the CCC, K-12 LEA, and a Local Corps may work together to promote educational opportunities for high school students to be trained to become energy auditors, and then have the opportunity practice these skills extensively to gain valuable work experience that benefits the student, their School District, potential employers, and their communities. These educational programs can result in substantial energy savings and operating cost reductions, create pathways for students interested in energy industry employment after they graduate, and promotes continuing education goals.

A recent example of the CCC working with a K-12 LEA to create this type of cooperative energy educational engagement is illustrated below, showing the way in which the CCC, Los Angeles Unified School District ('LAUSD'), and the Los Angeles Conservation Corps ('LACC') work together to develop and implement the LAUSD's new Student Energy Auditor Training ('SEAT') program for high school students:



CCC Proposition 39 Energy Industry Service Requests from LEAs:

Requests for Energy Opportunity Surveys from LEAs – In August of 2013 the CCC announced to all K-12 LEAs the availability of CCC Proposition 39 funded Energy Opportunity Surveys. LEAs were encouraged to apply for the CCC's Energy Opportunity Surveys by submitting a simple application form 'on-line' through the CCC's website, wherein the LEA identified the number of school and district buildings (and associated square feet) that they were requesting to be Surveyed by the CCC. This resulted in an initial response of more than **350** LEAs (approximately **17%** of the 2,000+ LEAs in California) requesting that the CCC Survey more than **33,000** School and other District buildings, consisting of more than **212,000,000** Square Feet of building space. Due to the exceptionally large volume of these initial requests for Surveys that the CCC received, in June of 2014 the CCC temporarily 'paused' the Survey application acceptance process from K-12 LEAs. Acceptance of Survey applications by the CCC from LEAs was resumed again in Q1 of 2016.

From July 2013 through the end of 2017, the CCC completed **1,327** Energy Opportunity Surveys of Schools (totaling **13,822** buildings) for **415** K-12 LEAs throughout California (approximately **20%** of the 2,000+ LEAs in California). Many of the **415** LEAs receiving Energy Opportunity Surveys from the CCC have not yet received Surveys for all of their schools and district buildings that they initially requested. This was because the demand for Energy Opportunity Surveys was so large that the CCC had to 'parse' and allocate the available supply and scheduling of Survey resources so that a larger number of LEAs could receive at least some number of Surveys. LEAs were encouraged to prioritize and select the Schools within their districts that were to initially receive Surveys, and that the CCC would then attempt to provide additional Surveys over time to the larger number of K-12 LEA applicants. Given that 4.5 years have now transpired since the original applications from LEAs for Energy Opportunity Surveys were received by the CCC, it is not clear how many of these original Survey requests from LEAs are still unfulfilled by other energy industry service providers (regardless of funding sources).

Approximately **80%** of all K-12 LEAs have not yet received Energy Opportunity Surveys from the CCC for their Schools (and other LEA District Buildings). Many of these LEAs may have contracted with energy industry providers for energy audits for some or all of their district buildings. Many of these LEA district schools and buildings have not yet received any energy audits or surveys to determine their energy efficiency improvement opportunities.

Requests for EE Retrofit Installation Services from LEAs – In mid 2015 the CCC began providing LEAs with Proposition 39 funded EE Lighting and Controls Retrofit Installation services. As per the CCC's original plan for the use of Proposition 39 funds in service to K-12 LEAs (Energy Opportunity Surveys followed by EE Retrofit Installations), the majority of the work performed by the CCC's ten (10) Proposition 39 funded Energy Corps crews changed from Energy Opportunity Surveys to the Installation of EE Retrofits. This change also greatly increased the amount of direct CCC contributions to K-12 LEA energy saved (kWh), reduction of energy costs, and the reduction of GHGE. There are now an average of seven (7) CCC Energy Corps crews performing EE Lighting and Controls Installation services.

Green House Gas Reductions: Since mid 2015 through the end of 2017, the CCC's Energy Corps crews performing EE Lighting and Controls Retrofit Installations have resulted in more than **7.59 Million kWh** saved annually (on a sustainable basis), a reduction of more than **1,800 Metric Tons** annually in Green House Gas Emissions ('GHGE"), a savings of more than

$1,025,000 in annual energy operating costs for the LEAs receiving these CCC energy industry services, and a very substantial savings of EE Retrofit Installations costs for LEAs. From July 2013 through the end of 2017, the CCC has performed **93** EE Lighting and Controls Retrofits Installation projects for a small percentage (**4.4%**) of the many LEAs needing these services. These Retrofit Installation projects take a much longer time period to perform by the CCC than Surveys, but they are of very substantial direct benefit to the LEA recipients in terms of reducing energy use and energy costs.

The CCC has not directly notified all of the 2,000+ K-12 LEAs of the availability of these Proposition 39 funded EE Lighting and Controls Retrofit Installation services. Nor has the CCC requested directly that K-12 LEAs statewide apply for these services in the same way that the CCC's Energy Opportunity Surveys were originally offered to LEAs (in the form of an 'on-line' application). Knowing that the supply of Retrofit Installation Services would be limited, the CCC announced the availability of these Retrofit Installation services at many speaking engagements throughout the State to LEAs over the past three (3) years.

It is clear from the energy conservation work performed by the CCC that the ongoing demand for the CCC's Proposition 39 funded EE Lighting and Controls Retrofit Installation services is very large, statewide, and the results are highly beneficial for K-12 LEA recipients.

Energy Industry Training for CCC Corpsmembers and Staff:

Training for Energy Conservation Services – The CCC's Energy Corps and its partners have developed training curriculum, survey data collection software systems, and the tools needed to provide efficient energy industry training for CCC Corpsmembers and Staff for use in traditional classroom & lab based learning environments, and also an extensive continuum of 'on-the-job' work\learn experience for both Energy Opportunity Surveys and EE Lighting and Controls Retrofit Installations. From July 2013 through the end of 2017, the CCC has trained **708** individual CCC Corpsmembers and **48** CCC Staff to perform Energy Opportunity Surveys. In addition, **408** of the Corpsmembers and **22** of the CCC Staff receiving Survey training have also been trained to perform EE Lighting and Controls Retrofit Installations. The following table provides details of the Proposition 39 funded training for CCC Corpsmembers and Staff:

Training for CCC Corpsmembers and Staff - Funded by Proposition 39

Training Totals	Totals To Date		Totals By Calendar Years									
			2017		2016		2015		2014		2013	
CCC Corpsmembers	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours
EO Survey Training	708	32,592	155	6,200	104	4,240	177	7,272	143	6,624	129	8,256
OSHA 10/30 Training	458	3,995	113	1,115	70	640	95	880	123	930	57	430
Retrofit Training	408	32,649	107	8,560	69	5,529	88	7,040	101	8,080	43	3,440
Presentation Training	90	450	0	0	0	0	0	0	90	450	0	0
Energy University Courses	248	1,688	32	64	36	132	56	475	36	297	88	720
Corpsmember Hours Trained		71,374	155	15,939	104	10,541	177	15,667	143	16,381	129	12,846
CCC Staff	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours	Trainees	Hours
Initial EO Survey Training	48	2,788	11	756	2	80	9	488	18	952	8	512
OSHA 10/30	31	250	6	40	2	20	3	30	16	130	4	30
Retrofit Training	24	1,920	2	160	2	160	3	240	14	1,120	3	240
Presentation Training	2	10	1	5	0	0	0	0	1	5	0	0
Energy University Courses	9	21	5	9	1	3	2	6	0	0	1	3
Staff Hours Trained		4,989	25	970	7	263	17	764	49	2,207	16	785
Total CMs & Staff Trained	756		Total number of individual Corpsmembers and Staff trained - many of whom receive two or more types of training									
Total Training Hours		76,363	Total number of trianing hours received by all Corpsmembers and Staff trained - for several types of training									

Recruitment, Training & Deployment Locations - CCC Corpsmembers & Staff – Starting in July of 2013 and continuing through the end of 2017, the CCC recruited, trained, and deployed **708** Corpsmembers and **48** Staff that provided Proposition 39 funded Energy Corps energy services to K-12 LEAs located throughout California.

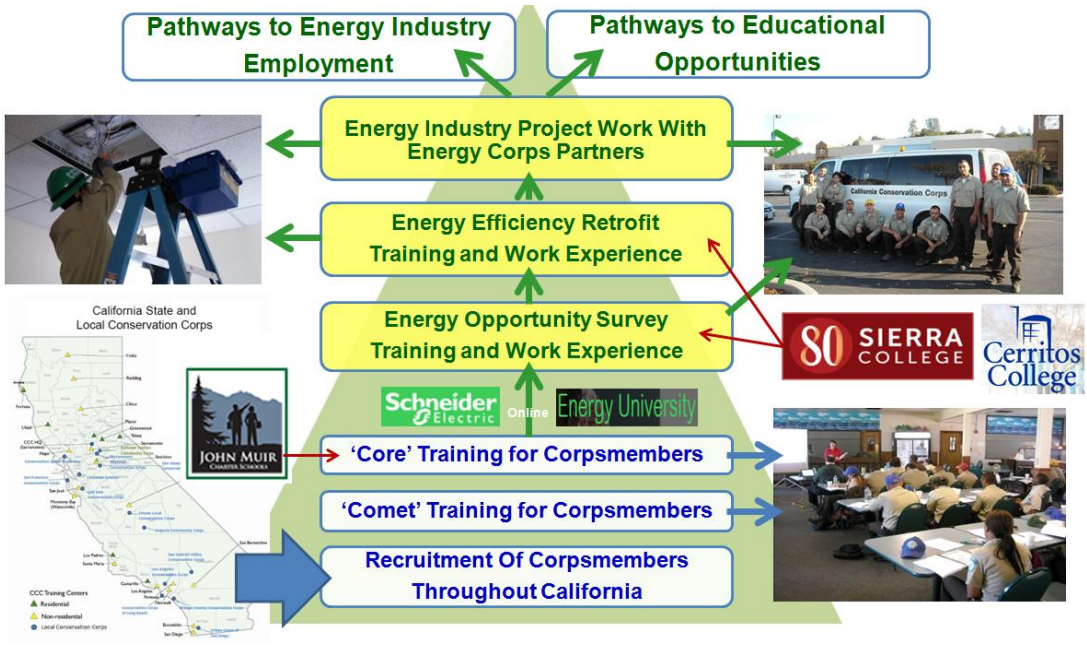
Recruitment and deployment of CCC Energy Corps Corpsmembers and Staff occurred throughout California. The following table identifies the **11** CCC Centers which recruited and deployed Corpsmembers and Staff between July of 2013 and the end of 2017, the number of Corpsmembers and Staff recruited and deployed at each of these 11 Centers from which these services were provided, and the areas from which these Corpsmembers and Staff were recruited to provide Proposition 39 funded energy services to K-12 LEAs located throughout California:

	Recruitment & Deployment Locations - CCC Proposition 39 Funded Corpsmembers & Staff			
	CCC Centers - Deployment	Corpsmembers	CCC Staff	CCC Recruitment Draw Areas
1	Redding	44	3	Redding, Shasta, Shasta Lake, Shasta County
2	Fortuna	15	1	Fortuna, Humboldt County & Statewide (CCC Residential Center)
3	Napa	38	4	Napa, Oak Knoll, Middletown, Sonoma, Cordelia, Fairfield, Lake County, Sonoma County, Solana County, Napa County
4	Sacramento	114	10	Sacramento, Notomas, South Sacramento, Arden, Sacramento County
5	Placer	65	5	Auburn, Placer County & Statewide (CCC Residential Center)
6	San Jose	49	5	San Jose, East San Jose, Milpitas, Buena Vista, Alum Rock, North Valley, Santa Teresa, Santa Clara County
7	Los Padres	22	1	Los Padres, San Luis Obispo County & Statewide (CCC Residential Facilitity)
8	Fresno	52	4	Fresno, Edison, Roosevelt, Bullard, Clovis, Herndon, Malaga, Easton
9	Norwalk	136	8	Norwalk, Sante Fe Springs, Cerritos, Bellflower, Paramount, South Whittier, Bell Gardens, Apollo Park, Compton, South Gate
10	Pomona	92	2	Pomona, Montclair, Claremont, Ontario, Chino, Narod, La Verne, Upland, & San Bernardino County
11	Vista	81	5	Vista, Oceanside, Carlsbad, Rancho Del Oro, San Marcos, Escondido, North San Diego, & San Diego County
	Totals:	708	48	

<u>Recruitment, Training & Deployment – Geographic Locations</u> – As identified in the previous table (above), between July of 2013 and the end of 2017 there were **11** CCC Centers which recruited and deployed Corpsmembers and Staff. The following illustration shows the geographic location of these 11 CCC Centers and the primary areas from which these Corpsmembers and Staff were recruited (red circles) to provide Proposition 39 funded energy services to K-12 LEAs located throughout California:

Description: Map locating all 58 counties in California.

<u>Multiple Levels and Partners for Energy Industry Workforce Training and Pathways</u> - As illustrated below, the energy industry and skills training that the CCC provides for all Corpsmembers consists of several progressive 'tiers' of training that build competency through extensive training and a continuum of on-the-job work experience:



<u>Recognition of Energy Corpsmembers by Energy Industry Partners</u>: The results of this extensive energy industry training and work experience have been widely recognized by the Energy Corps' Partners, Clients and recipients of these energy services. Energy Corps Corpsmembers have received a variety of scholarships, awards and employment offers directly from Energy Corps Partners, an example of which is shown below:

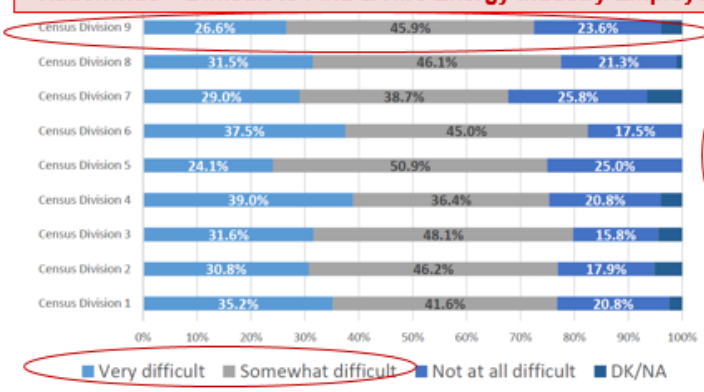
<u>Energy Industry Employment Pathways for Corpsmembers</u> - The energy industry nationwide is not able to find and employ sufficient numbers of trained and qualified individuals with relevant work experience to fill either current or planned entry or mid-level job opportunities:

Reported Occupations with Hiring Difficulty	Reported Reasons for Hiring Difficulty
Technicians or technical support (23%)	Lack of experience, training, or technical skills (35%)
Managers, directors, or supervisors (22%)	Insufficient qualifications, certifications, or education (31%)
Installation workers (21%)	Lack of non-technical skills – work ethic, critical thinking, etc. (23%)

CCC Energy Corps Training & Work Experience Applies To All 'Entry Level' Energy Efficiency Jobs

Figure 36. Energy Efficiency Hiring Difficulty by Census Region (Q4 2015)

Nationwide – Difficult to Find & Hire Energy Industry Employees



Source: http://energy.gov/sites/prod/files/2018/03/f30/U.S.%20Energy%20and%20Employment%20Report.pdf

The extensive energy industry training, substantial and relevant work experience, and the proven work ethic that Corpsmembers gain in the CCC's Energy Corps is very well aligned with the needs of energy industry (in all sectors) and other employers for entry level jobs:

<u>Energy Industry Employment Opportunities</u>:

- The Energy Industry Needs <u>Many</u> New Employees with Energy Efficiency Audit & Retrofit Training
- Current Energy Industry Employees are Retiring in record numbers
- Demand for Energy Use & Efficiency Increasing
- Current Trained Energy Industry Workforce Can Not Meet Demand for Energy Industry Growth

Energy Corps trained Corpsmembers are part of the Solution for the Energy Industry !

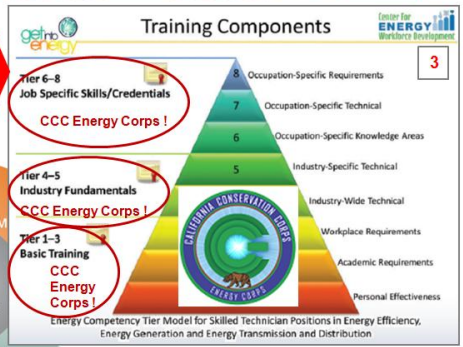
Perspectives from the Energy Industry …

1 Energy Industry Rife With Opportunities But Labors To Find Skilled Workforce

2 Magnitude of the Talent Shortage

- Available jobs expected to double from 1.7 million to 3 million
- 72 % of energy executives believe the ability to attract quality candidates to the energy industry will have a significant impact on North American competitiveness in the decades to come
- 58% of executives say their company "struggles to find the talent it needs."
- 74% say the problem will get worse in the next five years.
- 66% of employers say they expect the number of energy industry jobs to increase in the next five years

Energy Corps Trains For All 'Levels'

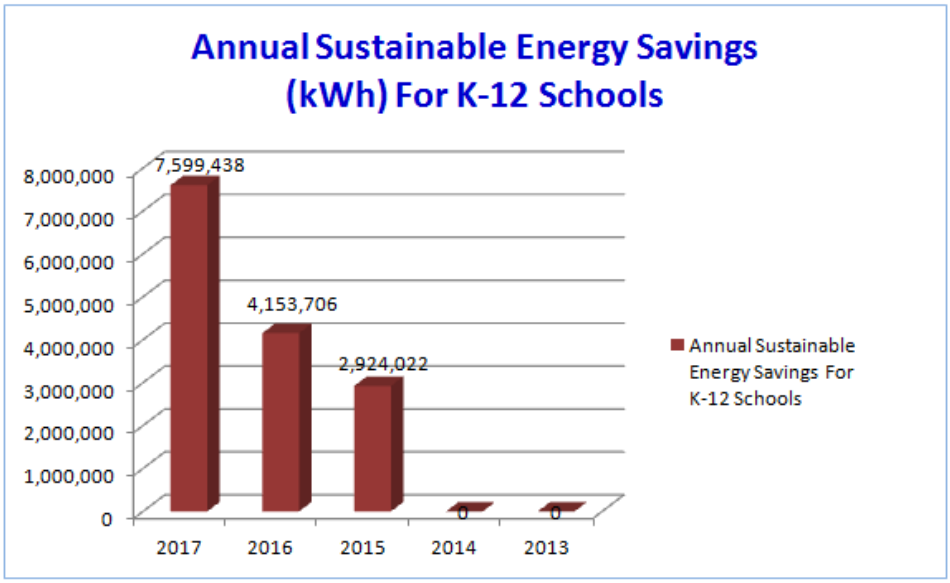


1, 2, 3, 4: Source: http://www.manpower.us/Website-File-Pile/Webinar-Recordings/Manpower/Energy-Webinar-Presentation_061114

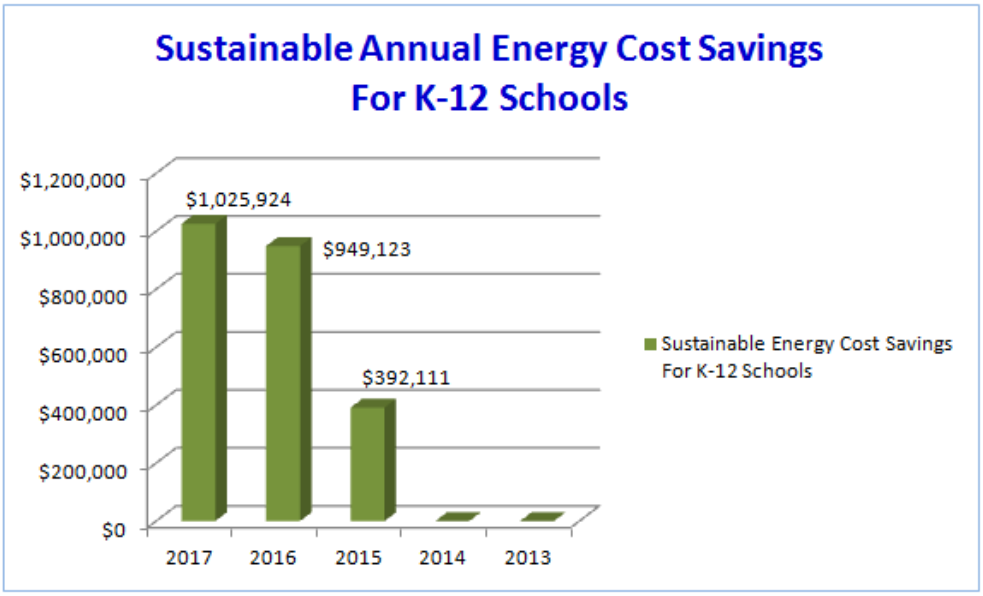
<u>The most Comprehensive Detailed Energy Data Available for K-12 Schools</u> – From July of 2013 through the end of 2017, the CCC has completed highly detailed "whole building" Energy Opportunity Surveys that provide energy systems inventory and energy use data collection for **13,822** K-12 LEA School and District buildings throughout California (for **79** Million Square Feet of conditioned building Space). This vast amount of detailed Energy Opportunity Survey data represents one the largest databases for K-12 LEAs currently availble (approximately **20%** of all K-12 school buildings in California).

Summary of 2017 Performance:

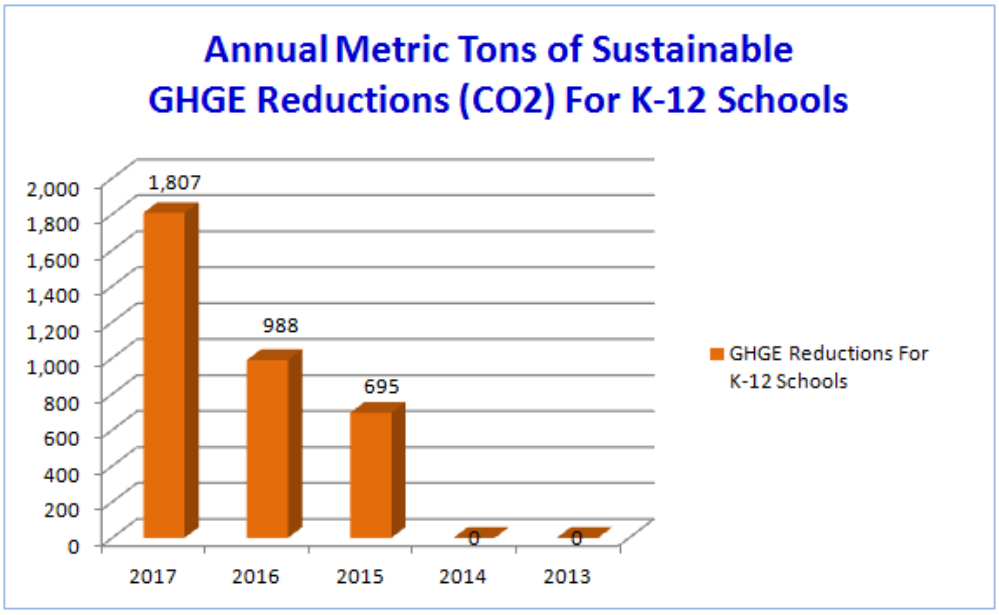
<u>Energy Savings</u> – Starting in mid 2015 and through the end of 2017, the CCC's Energy Corps Corpsmembers and Staff have performed the installation of EE Lighting and Controls Retrofits for K-12 LEA Schools. The installation labor costs of these Lighting Retrofits were funded by the CCC's Proposition 39 allocation, while the lighting retrofit materials, supplies and all other costs were funded by the K-12 LEA's. These EE Lighting and Controls Retrofits have resulted in annual and sustainable energy savings for K-12 LEAs are more than **7.599 Million kWh**:



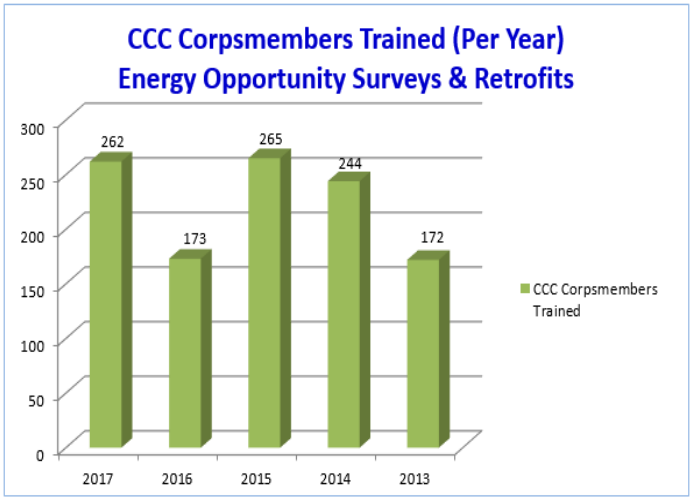
<u>Energy Cost Savings</u> – Resulting from the energy savings created directly by the CCC's Energy Corps Corpsmembers and Staff performing the installation of EE Lighting and Controls Retrofits for K-12 LEA Schools, from July of 2013 through the end of 2017, more than **$1,025,000** in annual and sustainable energy operating cost savings were created for K-12 LEAs. Upon completion of the Retrofit Installation services, these energy cost savings then became available for other K-12 LEA pursposes.

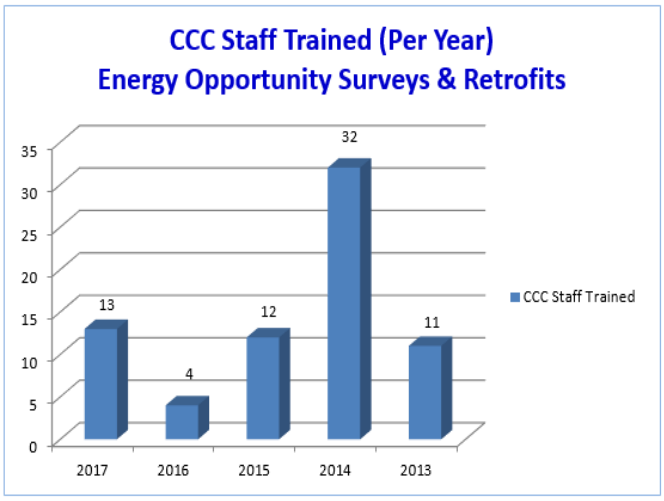


<u>Green House Gas Emissions</u> – Resulting from the direct energy savings created by the CCC's Energy Corps Corpsmembers and Staff performing the installation of EE Lighting and Controls Retrofits for K-12 LEA Schools, from July of 2013 through the end of 2017, more than **1,800 Metric Tons** of annual and sustainable GHGE (CO_2) have been reduced throughout the State:



Energy Industry Training for CCC Corpsmembers and Staff - From July 2013 through the end of 2017, the CCC's Energy Corps and its Partners have trained a total of **708** Corpsmembers and **48** CCC Staff to perform Energy Opportunity Surveys. In addition, **408** of these Corpsmembers and **24** CCC Staff have also been trained to perform EE Lighting and Controls Retrofit Installations:





Employment Opportunities for Energy Corps Corpsmembers: - The combination of well trained CCC Energy Corps Corpsmembers that have extensive energy industry work experience, and the difficulty encountered by energy industry employers in finding and employing both entry and mid level employees, has resulted in many CCC Energy Corpsmembers being recruited from the CCC and employed directly by energy industry employers. The CCC relys upon "self reporting" by Corpmembers upon their leaving the CCC, and has no other way currently to track either the initial or ongoing employment of Corpsmembers that do not self report their status upon leving the CCC (or thereafter).

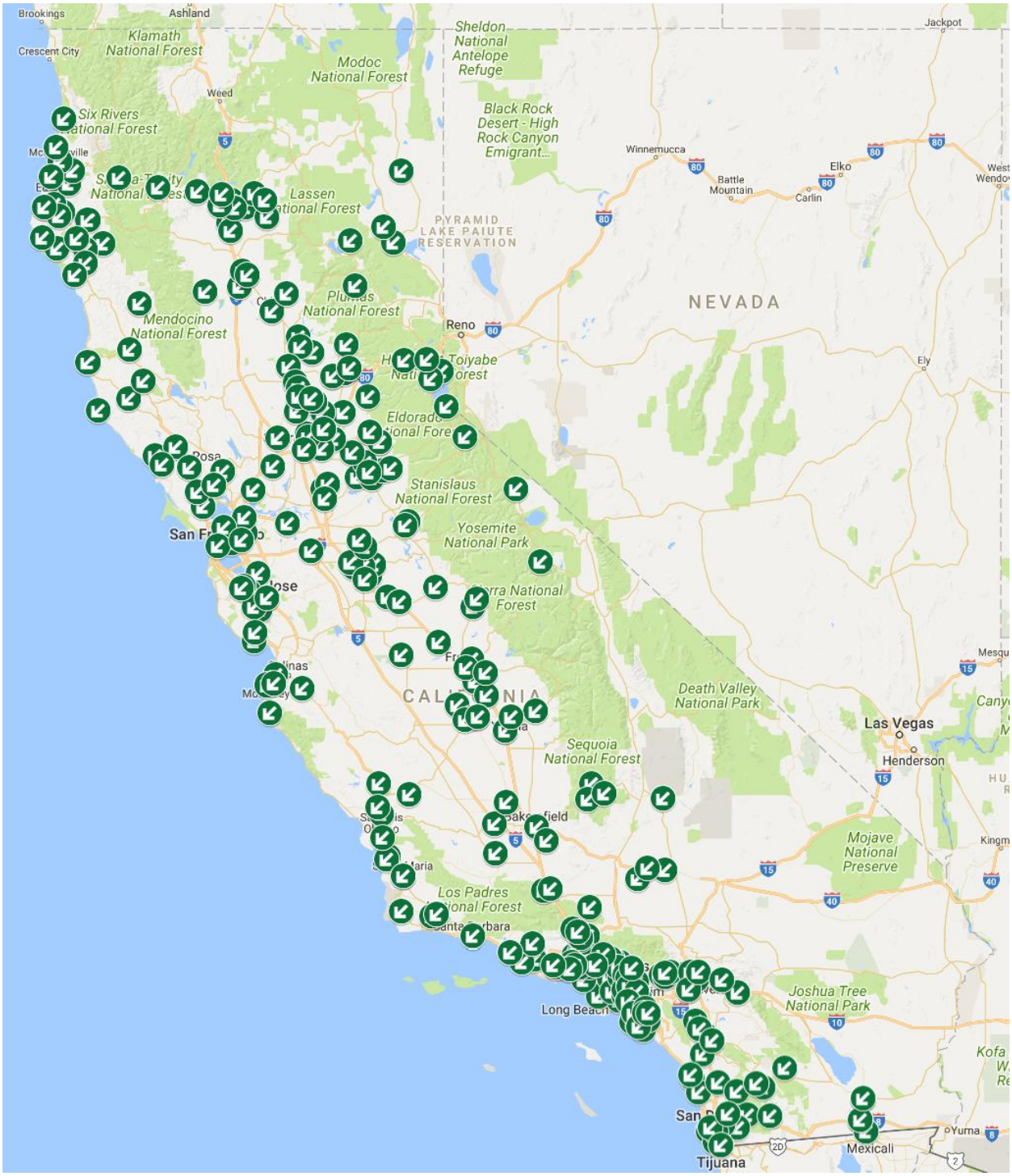
The resulting Corpsmember 'exit data' regarding their actual or intended employment status is therefore substantially incomplete. Accordingly, from July of 2013 through the end of 2017, there have been **sixty one (61)** Energy Corps Corpsmembers completing their tenure with the CCC that have self reported **accepting employment** offers with employers **within the energy industry**, **fifty nine (59)** Energy Corps Corpsmembers self reporting that they had **accepted employment offers with an unidentified employer** (which may or may not have been employers within the Energy Industry), and **seventy seven (77) Corpmembers** that **did not self report their actual or intended employment status** at the time that they completed their tenure with the CCC.

The remainder of FY 17-18: Energy Industry Services Provided to K-12 LEAs

The CCC's FY 17-18 Proposition 39 funding, and the resulting provision of energy industry services by the CCC's Energy Corps Corpsmembers and Staff for K-12 LEAs, will continue through 30 June 2018. The Energy Corps will continue providing K-12 LEAs located throughout California with EE Lighting and Controls Retrofit Installation services and Energy Opportunity Surveys that collectively identify energy conservation opportunities and sustainably reduce energy consumption, reduce energy operating costs, reduce green house gas emissions (GHGE), improve the learning environment for students and staff, and create energy industry employment pathways leading to job opportunities for CCC Energy Corps Corpsmembers.

<u>Geographic Distribution of CCC Proposition 39 Funded Energy Conservation Projects</u>:

The map below illustrates the geographic distribution of the locations throughout California in which the **1,452** Proposition 39 funded Energy Conservation Projects (Energy Opportunity Surveys and Energy Efficiency Retrofits) were performed by the CCC's Energy Corps on behalf of K-12 LEAs from July 2013 to the date of this report:



Distribution by Counties of CCC Proposition 39 Funded Energy Conservation Projects:

Projects Performed: From July of 2013 to the date of this report, the CCC's Energy Corps has performed **1,452** Proposition 39 funded Energy Conservation Projects (Energy Opportunity Surveys and Energy Efficiency Retrofits) for K-12 LEAs located throughout the state.

Counties Served: The CCC's Energy Corps has performed Proposition 39 funded Energy Conservation Projects in **47** of the 58 Counties (**81%**) in California.

Municipalities Served: The CCC's Energy Corps has performed Proposition 39 funded Energy Conservation Projects within **315** of the 482 Municipalities (**65%**) located throughout the state.

K-12 LEAs Served: The CCC's Energy Corps has performed Proposition 39 funded Energy Conservation Projects for **413** K-12 LEAs (**20%**) of the more than 2100 K-12 LEAs located throughout the state.

CCC Sevices by County	Total Projects	Survey Projects	Retrofit Projects	Cities Served
Alameda	9	9	0	2
Alpine	2	2	0	1
Amador	11	11	0	6
Butte	43	32	11	8
Contra Costa	39	39	0	5
El Dorado	12	6	6	5
Fresno	83	81	2	9
Humboldt	63	62	1	22
Imperial	8	7	1	2
Kern	37	36	1	12
Kings	8	7	1	5
Lassen	10	9	1	4
Los Angeles	190	184	6	47
Madera	14	14	0	3
Marin	1	1	0	1
Mariposa	1	1	0	1
Mendocino	13	13	0	7
Merced	2	2	0	2
Mono	6	6	0	2
Monterey	28	27	1	5
Napa	1	0	1	1
Nevada	22	19	3	7
Orange	78	76	2	15
Placer	33	17	16	6
Plumas	5	4	1	2
Riverside	54	50	4	6
Sacramento	78	76	2	10
San Bernardino	99	98	1	13
San Diego	179	151	28	28
San Francisco	11	11	0	1
San Joaquin	5	5	0	2
San Luis Obispo	42	42	0	8
Santa Barbara	15	13	2	4
Santa Clara	39	38	1	6
Santa Cruz	10	6	4	2
Shasta	47	47	0	13
Solano	9	9	0	2
Sonoma	11	11	0	6
Stanislaus	43	40	3	11
Sutter	9	6	3	2
Tehama	6	0	6	3
Trinity	1	1	0	1
Tulare	27	27	0	4
Tuolumne	1	1	0	1
Ventura	21	21	0	5
Yolo	4	4	0	1
Yuba	22	22	0	6
Totals	1,452	1,344	108	315

CCC Services	Total	CA Total	% Served	CCC Projects Surveys	CCC Projects Retrofits
Counties Served	47	58	81%	1,344	108
Cities Served	315	482	65%		
LEAs Served	413	2,100	20%		

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Alameda	Fremont	1	0
	Oakland	8	0
Alpine	Markleeville	2	0
Amador	Ione	2	0
	Jackson	3	0
	Pine Grove	1	0
	Pioneer	1	0
	Plymouth	1	0
	Sutter Creek	3	0
Butte	Anderson	0	1
	Bangor	1	0
	Chico	4	5
	Corning	2	0
	Forest Ranch	1	1
	Oroville	19	3
	Palermo	3	1
	Penn Valley	2	0
Contra Costa	Mountain View	12	0
	Knightsen	1	0
	Lafayette	5	0
	Martinez	6	0
	Richmond	15	0
El Dorado	Latrobe	0	1
	Lincoln	0	1
	Placerville	2	4
	Somerset	1	0
	South Lake Tahoe	3	0
Fresno	Clovis	27	0
	Del Rey	0	1
	Firebaugh	5	0
	Fowler	5	0
	Fresno	24	1
	Kingsburg	3	0
	Riverdale	3	0
	Sanger	13	0
	Tulare	1	0

Municipalities Served: The table to the left provides information regarding the distribution of the **1,452** Proposition 39 funded Energy Conservation Projects (Energy Opportunity Surveys and Energy Efficiency Retrofits) performed by the CCC's Energy Corps for **413** LEAs, in **315** Municipalities (Cities & Towns), distributed across **47** Counties from July 2013 to the date of this report.

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Humboldt	Arcata	5	0
	Bayside	1	0
	Blocksburg	1	0
	Blue Lake	1	0
	Bridgeville	1	0
	Carlotta	1	0
	Eureka	22	0
	Ferndale	2	0
	Fortuna	3	0
	Honeydew	2	0
	Kneeland	1	0
	Korbel	1	0
	McKinleyville	3	0
	Miranda	3	0
	Orick	1	0
	Petrolia	6	0
	Redway	1	0
	Rio Dell	2	0
	Samoa	1	1
	Trinidad	2	0
	Weott	1	0
	Whitethorn	1	0
Imperial	Brawley	6	0
	El Centro	1	1
Kern	Bakersfield	17	1
	Boron	1	0
	Buttonwillow	1	0
	Edwards	7	0
	Kernville	1	0
	Lake Isabella	1	0
	Lamont	1	0
	North Edwards	2	0
	Ridgecrest	1	0
	Taft	2	0
	Wasco	1	0
	Weldon	1	0
Kings	Armona	3	0
	Hanford	2	0
	Lakeside	1	0
	Lemoore	1	0
	Somerset	0	1
Lassen	Janesville	1	0
	Los Molinos	1	0
	Susanville	5	1
	Termo	2	0

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Los Angeles	Agoura Hills	4	0
	Alhambra	0	1
	Altadena	1	0
	Bassett	2	0
	Calabasas	6	0
	Canyon Country	3	0
	Castaic	4	0
	Chatsworth	1	1
	El Centro	1	0
	El Monte	4	0
	Encino	2	0
	Glendale	22	0
	Granada Hills	3	0
	Hawthorne	1	0
	Hidden Hills	1	0
	Inglewood	0	3
	La Cañada Flintridge	7	0
	La Crescenta	6	0
	La Habra	6	0
	La Puente	5	0
	Lake Hughes	1	0
	Lakewood	1	0
	Lawndale	10	0
	Los Angeles	6	0
	Lynwood	10	0
	Monrovia	9	0
	Monterey Park	0	1
	Northridge	2	0
	Norwalk	3	0
	Palisades	1	0
	Pasadena	1	0
	Porter Ranch	1	0
	Rosemead	1	0
	Santa Clarita	10	0
	Santa Fe Springs	8	0
	Saugus	2	0
	Sherman Oaks	6	0
	Solvang	1	0
	South El Monte	1	0
	Tarzana	1	0
	Tujunga	1	0
	Valencia	3	0
	Valley Village	1	0
	West Hills	2	0
	Westlake Village	1	0
	Whittier	17	0
	Woodland Hills	5	0

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Placer	Auburn	2	0
	Foresthill	1	0
	Lincoln	12	13
	Nevada City	0	1
	Placerville	1	1
	Sheridan	1	1
Plumas	Marysville	1	1
	Quincy	3	0
Riverside	Banning	10	0
	Lake Elsinore	6	2
	Murrieta	1	0
	Riverside	11	0
	Temecula	18	1
	Wildomar	4	1
Sacramento	Antelope	9	2
	Elverta	2	0
	Folsom	10	0
	Galt	8	0
	Herald	1	0
	North Highlands	4	0
	Rancho Cordova	10	0
	Rio Linda	2	0
	Roseville	1	0
	Sacramento	29	0
San Bernardino	Bloomington	8	0
	Colton	15	0
	Fontana	17	0
	Frazier Park	1	0
	Grand Terrace	5	0
	Montclair	1	0
	Ontario	5	0
	Rancho Cucamonga	4	0
	Rialto	24	1
	Riverside	1	0
	San Bernardino	2	0
	Upland	14	0
	Yucaipa	1	0

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
San Diego	Alpine	1	0
	Borrego Springs	2	0
	Brawley	1	0
	Calabasas	0	1
	Calexico	18	0
	Carlsbad	4	0
	Coronado	7	0
	El Cajon	3	0
	El Centro	2	0
	Encinitas	8	0
	Escondido	1	0
	Fallbrook	1	0
	Imperial Beach	9	9
	Jamul	4	0
	Julian	4	0
	La Mesa	1	0
	Lebec	2	0
	Lemon Grove	8	0
	Monrovia	1	0
	National City	13	0
	Oceanside	2	1
	Pine Valley	1	0
	Ramona	11	2
	San Diego	42	12
	San Ysidro	1	1
	Santa Ysabel	1	0
	Santee	0	1
	Temecula	3	1
San Francisco	San Francisco	11	0
San Joaquin	Acampo	1	0
	Tracy	4	0
San Luis Obispo	Arroyo Grande	1	0
	Atascadero	13	0
	Oceano	1	0
	San Luis Obispo	17	0
	San Miguel	1	0
	Santa Maria	1	0
	Shandon	3	0
	Templeton	5	0

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Santa Barbara	Lompoc	6	0
	Santa Barbara	3	1
	Santa Maria	3	0
	Santa Ynez	1	1
Santa Clara	Canyon	1	0
	Los Gatos	1	0
	Palo Alto	16	0
	San Jose	13	1
	Saratoga	6	0
	Stanford	1	0
Shasta	Anderson	6	0
	Bella Vista	1	0
	Cottonwood	2	0
	French Gulch	1	0
	Junction City	1	0
	Millville	2	0
	Oak Run	1	0
	Palo Cedro	6	0
	Redding	19	0
	Shasta Lake	4	0
	Shingletown	2	0
	Westwood	1	0
	Whitmore	1	0
Solano	Dixon	7	0
	Fairfield	2	0
Sonoma	Cazadero	1	0
	Healdsburg	1	0
	Monte Rio	1	0
	Petaluma	1	0
	Santa Rosa	6	0
	Sonoma	1	0
Stanislaus	Brawley	1	0
	Ceres	16	0
	Denair	1	0
	Hickman	1	0
	Hughson	4	1
	Modesto	10	2
	Oakdale	2	0
	San Jose	1	0
	Sonora	1	0
	Turlock	1	0
	Valley Home	2	0
Sutter	Live Oak	6	0
	Nicolaus	0	3

Distribution by Municipalities of CCC Proposition 39 Funded Energy Conservation Projects:

Counties	Cities	Surveys	Retrofits
Tehama	Gerber	0	1
	Los Molinos	0	4
	Paskenta	0	1
Trinity	Burnt Ranch	1	0
Tulare	Hanford	3	0
	Lemon Cove	1	0
	Tulare	22	0
	Visalia	1	0
Tuolumne	Jamestown	1	0
Ventura	Camarillo	14	0
	Oxnard	2	0
	Santa Paula	2	0
	Thousand Oaks	1	0
	Ventura	2	0
Yolo	Woodland	4	0
Yuba	Camptonville	1	0
	Marysville	6	0
	Nevada City	3	0
	Olivehurst	3	0
	Plumas Lake	7	0
	Wheatland	2	0